

## SYSTEM AND METHOD FOR HIERARCHICAL SWITCHING

### ABSTRACT OF THE INVENTION

5     A system and method have been provided for hierarchically  
 arbitrating in a broadband information switching network. The method  
 promotes the fair and efficient distribution of information packets across  
 the switch fabric that ultimately permits the switch to maximally match  
 information packets to switch output addresses, at faster rates and higher  
 throughput. The method comprises: accepting variably sized information  
 10    packets at a plurality of switch inputs, that address a plurality of switch  
 outputs; at each switch input, queuing the information packets into a  
 plurality of queues; parsing the information packets into units of one cell;  
 simultaneously arbitrating between each switch output and a plurality of  
 available switch inputs, where an available input is defined to have at  
 15    least one queue with an information packet addressing that particular  
 switch output; selecting a queue; locking the link between switch inputs  
 and switch outputs; and, transferring information packets across the links  
 in units of one cell per master decision cycle.